

## **Passaic River RM 10.9 TCRA - Final Design Report (May 6, 2013)**

ODST (Pecchioli) and BEERA (Anne Hayton) provided comments on the Draft Final Design Report (dated February 27, 2013) to USEPA and the CPG in a March 22, 2013 review memorandum (hereafter referred to as the "March 22 memo"). The Final Design Report (dated May 6, 2013) and the associated CPG Response to NJDEP Comments (i.e. CPG responses to the March 22 memo) document were reviewed in the context of the March 22 memo.

(1) Water Quality Management Plan (WQMP): ODST and BEERA are in the process of reviewing the draft WQMP (dated April 19, 2013) prepared by the CPG. In general, this draft WQMP – and the Final Design Report – do not address the ODST/BEERA comments in the March 22 memo. In response, ODST and BEERA prepared an outline of a WQMP acceptable to NJDEP which has been submitted to USEPA for transmittal to CPG.

- a) The TCRA should not be implemented until a WQMP acceptable to the NJDEP and USEPA has been prepared. This WQMP must be designed to meet the project objectives and be protective of surface water quality in accordance with the ARARs in Section 2 of the Final Design Report.
- b) The WQMP, Appendix E-Section 01 45 16, and Appendix G-Section 4.7 must be consistent. In addition, procedures to coordinate the monitoring activities of the contractor and CH2M HILL must be developed and implemented (see CPG Response to NJDEP Comment #37 and Appendix E-Section 01 45 16, 1.01-B).
- c) Coordination/communication procedures between the water quality monitoring personnel and the dredging/capping operations personnel must be developed such that any required actions/BMPs triggered by water quality conditions can be implemented by both parties as appropriate. See Appendix E – Section 31 23 24, 2.06.
- d) Appendix G, Section 4.7.1: this section should be revised to be consistent with the final WQMP.

- (2) Long-term Monitoring Program: this plan was not submitted as part of the Final Design Report, but the CPG has stated in numerous CPG Responses to NJDEP Comments that it will be submitted to NJDEP for its review. See the March 22 memo: "Recommendation – c"; "Specific Comments" #1, #10, #11, #12, #13, and #14; and "Issues to be Addressed ..." Comment #8. In addition, it is unclear how the proposed combined sand/active layer of the cap (see Comment #3 and associated sub-comments) can be monitored to evaluate long-term cap performance.
- (3) Cap Design: the cap has been redesigned such that the "active material" – AquaGate (10% activated carbon) – will be mixed with the sand portion of the cap; i.e. there will be no distinct "active layer" (Section 7.2.2, page 7-2; Figure 7-4). I am not aware of any contaminated sediment remediation projects that have used this type of cap; the CPG should provide documentation of completed projects/case studies where such a cap has been successfully employed. Also, see the March 22 memo Technical Comment #5.
- a) Section 7.2.2.2, pages 7-3/4 – Porewater Groundwater Seepage Velocity: the data from the four stations were very variable, ranging between 26 and 942 cm/year. The use of the average velocity (314 cm/year) in the CAPSIM Model may not be "conservative" despite the characteristics of the sediment and the COPC concentrations at the four sampling locations. Likewise, use of the average porewater COPC concentrations in the CAPSIM Model may not be "conservative". To be truly "conservative", the maximum groundwater seepage velocity and the maximum porewater COPC concentrations (Table 7-1) should have been used in the CAPSIM Model (i.e. this would evaluate the potential "worst case" scenario).
- b) Section 7.3, page 7.7: the combined sand/active layer is to contain 35% active material by volume. The AquaGate is comprised of only 10% activated carbon (by volume? weight? number of particles? – this is not clear). What will be the "mix ratio" of sand and AquaGate in the combined sand/active layer? From the parameters used in the CAPSIM Model (Appendix C), it appears that the combined sand/active layer will be comprised of 75% sand and 25% AquaGate by volume – this is inconsistent with the above stated specification of "35% active material by volume". In addition, if the "active material" refers to "activated carbon" – a much larger percentage of the combined sand/active layer would have to be comprised of AquaGate compared to sand. Also see Comment d below.

- c) How will the sand and AquaGate be mixed to consistently meet the required ratio in the combined sand/active layer? What quality assurance/quality control procedures will be implemented to assure that this ratio is met?
  
  - d) Section 7.6.1, page 7-9: states “The minimum and average percentages of active material (i.e. AquaGate composite particles containing 10 percent activated carbon) within the total sand/active layer are 25 percent and 30 percent by volume, respectively.” This is inconsistent with the requirements stated in Section 7.3 (see Comment b above). In addition, what does “active material” refer to? – activated carbon or AquaGate (which contains only 10% activated carbon)?
  
  - e) Appendix C – CAPSIM Model Results: a 25%:75% v/v ratio of AquaGate and sand in the combined sand/active layer would provide only 2.5% by volume activated carbon in the layer.
  
  - f) Appendix G – Sections 1.2.3.1 and 4.6: these sections should be revised to be consistent with the final cap design.
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- (4) Silt Curtain: Section 4.4.4 (page 4-9) and Appendix E – Section 31 23 24, 1.06-A-1-a (Dredging and Operations Plan) should include provisions to minimize the dispersal of suspended sediment contained by the curtain during its removal. A maximum turbidity level should be established, such that the curtain will not be removed until the turbidity within the curtain has fallen below this level.
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- (5) Section 7.2.3, page 7-6: as requested by USEPA, the Final Design Report includes an analysis of river flow conditions during a 500-year storm. This analysis indicated that larger armor stone, placed in a thicker layer, would be needed to protect the cap compared to the 100-year design storm. Should the cap design be revised to reflect this finding?

- (6) Sections 7.8.1 and 7.8.2, pages 7-10/11: these sections should be revised to be consistent with the currently proposed combined sand/active layer for the cap.
- (7) Section 7.8.3, page 7-11: references Table 4-5 for the “noise monitoring program” – but Table 4-5 does not address noise monitoring.
- (8) Section 8 – Overland Transportation: should include Best Management Practices for the transport of stabilized dredged material and wastewater. For example, see Appendix E – 01 91 14, 3.03.
- (9) Appendix E – Section 01 45 16, 1.02-A-1: the contractor’s WQMP (and any subsequent changes to the WQMP – see 1.06-A) must also be approved by NJDEP and USEPA.
- (10) Appendix E – Section 01 45 16, 1.05-B: refers to “acute water quality criteria” – this should be revised to be consistent with the language in the to-be-approved WQMP that refers to “action/trigger levels” (or similar language). Also similarly revise 3.03. Also see Appendix E – Section 31 23 24, 3.01-E.
- (11) Appendix E – Section 02 32 00: revise this section as needed to be consistent with the current cap design. Also see Comment #3-c.